

ABSTRACT

VIBRATING-BEAM ACCELEROMETER

Accelerometer micromachined in a plane plate comprising a base, and at least one measurement cell including a moveable seismic mass (1) connected to the base and capable of moving translationally along the sensitive y axis of the accelerometer under the effect of an acceleration γ along this y axis, a resonator cell that comprises a resonator (30) that can vibrate and be subjected to a tensile or compressive force depending on the direction of the acceleration γ and is placed symmetrically with respect to an axis of symmetry S of the structure, this axis S being parallel to the y axis and passing through the center of gravity of the seismic mass (1), the measurement cell furthermore including amplification means (2) for amplifying the acceleration force, which means comprise at least one anchoring foot (7) for anchoring to the base, two rigid terminations (4) of the resonator cell and two pairs of micromachined arms (5, 6) symmetrical with respect to the axis S, each pair comprising a first arm (5) connecting a termination (4) to the seismic mass (1), and a second arm (6) connecting the same termination (4) to the anchoring foot (7), the angle α between the Ox axis and the first arm being small enough for the tensile or compressive force exerted on the resonator (30) to be greater than the acceleration force exerted on the seismic mass (1).

Figure 1